

July 7, 1925.

1,545,235

R. E. COLE

SNOWPLOW

Filed April 21, 1923

Fig. 1.

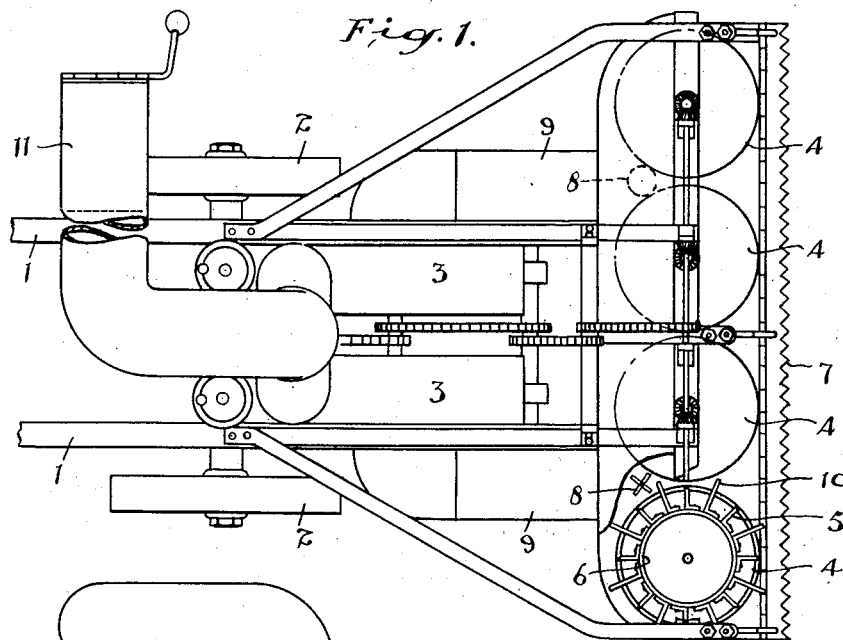


Fig. 2.

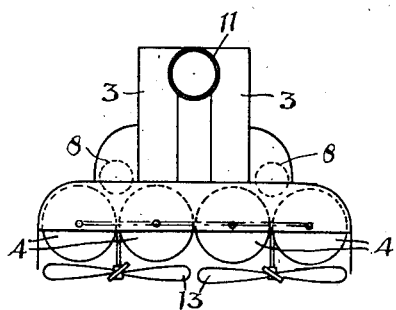
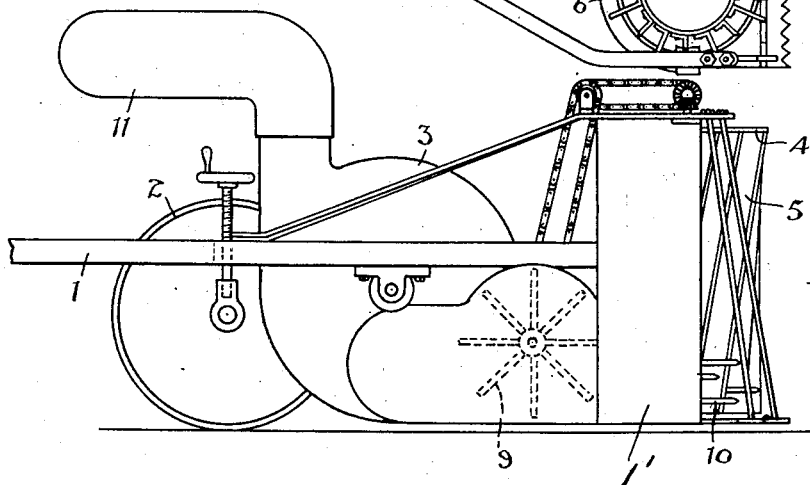


Fig. 4.

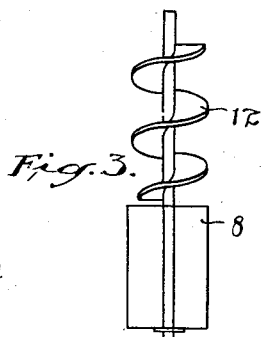


Fig. 3.

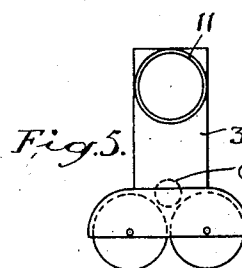


Fig. 5.

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UNITED STATES PATENT OFFICE.

ROBERT E. COLE, OF HIGHLAND CREEK, ONTARIO, CANADA.

SNOWPLOW.

Application filed April 21, 1923. Serial No. 633,701.

To all whom it may concern:

Be it known that I, ROBERT E. COLE, a subject of the King of Great Britain, and resident of Highland Creek, county of York, Province of Ontario, in the Dominion of Canada, have invented certain new and useful Improvements in Snowplows, as described in the following specification and illustrated in the accompanying drawings, that form part of the same.

The principal objects of the invention are, to devise a machine which will effectively clear the snow from the highways irrespective of the condition of snow, thereby maintaining open highways for traffic at all seasons of the year.

A further object is to devise a simple and efficient mechanism which may be operated at the minimum cost.

The principal feature of the invention consists in the novel arrangement of a plurality of vertically disposed cutter members adapted to cut into the snow at whatever height it may be and to pass the snow cut thereby, into a succession of fan members to finally project the snow clear of the highway.

In the drawings, Figure 1 is a plan view of my improved machine, a portion of the top casing being broken away to disclose one of the cutter members.

Figure 2 is a side elevational view.

Figure 3 is an enlarged detail of one of the supplementary passing members.

Figure 4 is a diagrammatic plan view of a slightly modified structure.

Figure 5 is a diagrammatic plan of a further modified structure.

This device is adapted to be used upon the forward end of a vehicle and a frame structure, in the form of a pair of bars 1, extends forwardly from the motor, being adjustably supported by the wheels 2.

Mounted between the bars is a high power blower 3 which may be either in a single or double form, the double being shown and said blower is operated from the motive power of the vehicle or by a separate motor.

Forward of the blower and supported upon a suitable frame at the front end of the bars 1, are a plurality of rotary cutters 4 vertically journaled in a casing 1' open at the front. These cutters are preferably formed with spiral blades 5 arranged upon supporting drums 6 and are geared to operate in pairs rotating inwardly.

A serrated ice cutting blade 7 is arranged at the bottom of the open casing extending completely across the machine, being adapted to cut into hard crusted material in advance of the revolving knives, the knives rotating in unison in pairs cutting the snow against which they are directed and throwing it inward.

An arrangement of vertical beaters 8 between each of the pairs is here shown to prevent the sticking of the snow, as it is thrown inward, and the snow, thrown inward from the beaters 8, is caught by the fans 9 and directed into the central fan or blower 3.

The drums 6 may if desirable be provided with an arrangement of radial spikes 10 to serve in breaking up large chunks of ice. These spikes being arranged at the bottom end of the cutters 4 and the said cutters are made sufficiently high to cut away any ordinary snow bank and they will effectively cut into any depth of snow.

The snow is passed from the cutters into the beaters 8 and from there into the fans 9 to the blower 3. The blower directs the snow through the transverse pipe 11 from which it is discharged, either to the side of the road or into wagons.

In the detail enlargement shown in Figure 3, the beaters 8 are provided with a spiral flange 12 to take the snow from the upper portion of the rotary cutters and feed it downwardly to the entrance to the fans. Such a spiral feed device may be arranged to work transversely of the machine if desired to clear the machine of ice, or even carry the snow to the blower.

In the diagram shown in Figure 4 the four cutters are arranged in the frame and in front of these cutters are arranged a pair of rotating cutter blades 13 which break down the snow in high banks before it is caught by the vertical cutters which pass it in through the fans and central blower.

In Figure 5 is shown a simple form of small machine where two vertical cutters are used to throw the snow into a single acting centrally arranged fan.

A snow plow such as described is carried on the end of a truck and when operated at proper speed will cut away any kind of snow and effectively discharge it wherever the discharge pipe may be directed.

What I claim as my invention is:—

1. A snow plow, comprising, a plurality

of vertically journalled rotatable cutters, fan members mounted centrally between and immediately to the rear of each pair of cutters and adapted to pass the snow received from the cutters, and a central blower fed by said fan members and adapted to discharge the snow.

2. A snow plow, comprising, a rigid frame adjustably supported, a casing secured to the front end of said frame being open at the front, vertical rotary cutters journalled in said casing and arranged in pairs, the members of each pair turning inwardly to cut the snow and throw it into the casing, conduits arranged to the rear of said cutters adapted to direct the snow backwardly, fans in said conduits, and rotary means for discharging the snow delivered from said conduits clear of the machine.

3. In a snow plow, a rigid frame, a casing supported from said frame and open

at the front and having a plurality of journals arranged at the top and bottom, drums supported on said journals and having radial cutter blades, spikes secured to the drums adjacent to the bottom between said cutter blades, means for rotating said drums to operate in pairs, fans arranged to the rear of said pairs of drums, and means for discharging the snow thrown rearwardly by the said fans.

4. A snow plow, comprising a rigid frame, a pair of wheels adjustably supporting said frame, means for raising and lowering the frame in relation to the wheels, an enclosed discharge fan journalled transversely in the frame, a casing arranged at the forward end of the frame and having openings communicating with said discharge fan, and rotary cutters vertically journalled in said open casing.

ROBERT E. COLE.